

**AMENDMENTS TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**LISTING OF CLAIMS:**

1. (Currently Amended) A method for smelting sulfidic copper concentrates, in which method copper sulfide bearing material is smelted in a smelting furnace (1) for creating blister copper and slag, wherein at least part (3) of the feed of the smelting furnace (1) is copper sulfide (3) bearing material obtained by means of sulfide bearing material (2) that is fed to a the hydrometallurgic further processing (12, 19) of the slag (11) created in the smelting process, wherein the hydrometallurgic processing comprises a leaching step and a conversion step, wherein:

the leaching step comprises combining the slag created in the smelting process with sulfuric acid, hydrochloric acid, or a combination of these, a copper-depleted iron sulfate solution, and an oxygen-containing gas, precipitating iron, and producing an iron-depleted copper sulfate solution;

the conversion step comprises combining the iron-depleted copper sulfate solution obtained from the leaching step with a sulfide-containing concentrate, and producing copper sulfide and an iron sulfate solution; and wherein the iron sulfate solution is recycled from the conversion step to the leaching step.

12. (Currently Amended) A method according to claim 1, wherein the slag ~~(11)~~ obtained from smelting is silicate bearing.

13. (Currently Amended) A method according to claim 1, wherein the slag ~~(11)~~ obtained from smelting is ferrite bearing.

14. (Currently Amended) A method according to claim 13 ~~3~~, wherein the leaching ~~(12)~~ of the slag is carried out as atmospheric leaching.

15. (Currently Amended) A method according to claim 14, wherein the leaching ~~(12)~~ of the slag is carried out at the temperature of 50-105°C.

16. (Currently Amended) A method according to claim 13 ~~3~~, wherein the leaching ~~(12)~~ of the slag is carried out in an autoclave.

17. (Currently Amended) A method according to claim 13 ~~3~~, wherein the conversion ~~(19)~~ of the copper, leached from the slag, into sulfide is carried out at the temperature of 90-200°C.

18. (Currently Amended) A method according to claim 17, wherein the conversion step ~~(19)~~ of converting the copper, leached from the slag, into sulfide is carried out at the temperature of 150-190°C.

19. (Currently Amended) A method according to claim 13 3, wherein the leaching step (12) and the conversion step (19) are controlled by measuring and adjusting the surface state and reactions of the essential dissolving and precipitating phases, on the basis of mineral-specific potentials, impedance values and solution content values measured by mineral based electrodes.

20. (New) A method according to claim 1, wherein the sulfide-containing concentrate comprises one or more of  $\text{CuFeS}_2$ ,  $\text{Fe}_{1-x}\text{S}$ ,  $(\text{Zn}, \text{Fe}, \text{Mn})\text{S}$ ,  $\text{PbS}$ ,  $\text{NiS}$ , or  $\text{FeS}$ .

21. (New) A method according to claim 1, wherein the copper sulfide produced in the conversion step is recycled to the smelting furnace.

22. (New) A method according to claim 1, wherein the iron sulfate solution is acidic.

23. (New) A method according to claim 1, further comprising recovering dust from a smelting exhaust gas and feeding the dust to the leaching step.

24. (New) A method according to claim 1, further comprising treating the copper-depleted iron sulfate solution to recover zinc or nickel or both, contained therein.

25. (New) A method according to claim 24, wherein the treating of the copper-depleted iron sulfate solution comprises contacting the copper-depleted iron sulfate solution with a sulfide to produce zinc sulfide, nickel sulfide, or both.